



RESEARCH PAPER

Creation of quilt cover designs using CAD technology

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Abstract : Introduction of modern technique of CAD is a powerful tool for product designing and development and is user friendly. These days advanced two or three dimensional software are used widely in designing sector. The time consuming process of textile designing has been easier by Computer Aided Designing. The huge advantage offered by digital system for drawing and modeling allows designs to be seen from any angle as well as easily manipulated in terms of colours, textures, shape etc. There is a great demand for designer and value-added quilt covers amongst consumers. Forty designs of surface decoration techniques of appliqué work, patch work, fabric painting and stencil printing were created in Corel DRAW, ten designs for each selected techniques were created. The four top preferred surface decoration techniques *i.e.* appliqué work, patch work, fabric painting and stencil printing with most preferred tucks and piping were selected for application on quilt covers. Three placements of each selected design with possible were done; hence 24 placements each for front and back side of quilt covers were done in Corel DRAW.

Key Words : Quilt covers, Surface decoration techniques, CorelDRAW

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INTRODUCTION

Home textile is one of the most demanding and emerging fields, full of scope of innovation and creativity. Today, consumers demand for value addition, diversified product, technology refinement and innovation in home textiles. Innovation refers to a new way of doing something and is more than creativity. Innovation is about bringing this creativity in the market, which is an entrepreneurial activity. Designs need to be innovative and have the alternative use of technology. The comprehensive application of computer and software technology provides designers with a new way to express design ideas, help designers accurately, vividly and

efficiently express design intentions, and provide some supplements for designers' imagination. Innovation in materials, processing with colours for shades and prints, finishing for aesthetics and functional effects, designs. Display and publicity are key elements for growth and successful marketing of home textiles (Patel, 2007). The designing activity is not a casual and simple process. The conventional method of designing was tedious, time consuming and laborious. The time consuming process of textile designing has been easier by Computer Aided Designing. Thus, the present study has been planned to create innovative designs for quilt covers using CAD technology. Ou *et al.* (2020) mentioned that due to the non-manual design, the visual effect of textile designed

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by computer has a strong mechanical taste and lacks human perceptual factors, which makes it cold and boring and difficult to fully meet people's psychological needs.

With the rapid development of science and technology, the application scope of computer technology and related software is expanding, while improving the work efficiency of various industries, the quality of people's work has also been greatly improved. CAD technology drawing can not only improve the standardization of scheme design, but also effectively shorten the time, which is of great significance to the improvement of construction quality (Shao, 2021).

Upadhyay *et al.* (2020) conducted a study on Designing of Diwan cover sets inspired from Chikankari Embroidery using Computer Aided Designing fine embroidered designs of Chikankari were adapted using CAD on diwan cover sets to widen the existing product range with the novel look. Out of total 50 motifs, the top scored 5 motifs were selected and arranged in different ways using rotation, flipping, to form different repeats brick, block dihedral, half drop e.t.c. The developed repeats were assessed on the parameters like size of the motif, placement of the motif and overall appearance. The top scored repeats were then arranged in different styles using single and combinations of motifs (double motifs and triple motifs) for the designing of diwan cover sets. Total 12 arrangement layouts which included 4 each single, double and triple motif arrangement were prepared using COREL DRAW X3. These layout sheets were evaluated by the panel of experts using 5 point rating scale on different parameters *i.e.* clarity of designs, novelty of designs, design proportion and overall appearance. It was opinioned that the developed designs in the study will help in breaking the monotony of the existing designs and would enhance the range of designing and production of home furnishing articles to embrace the global market.

MATERIAL AND METHODS

Selection of respondents :

The present study was conducted to create innovative quilt cover designs. To attain the specific objective 30 respondents were selected from I.C College of Home Science, CCS HAU, Hisar for selection of created designs and placements.

Collection of data from respondents:

To know the existing practices followed for quilt

covers regarding the types of quilt covers available in the market, types of quilt covers used, problems faced by the respondents with the readymade quilt covers an interview schedule was prepared. Preferences of respondents were sought for fabric, colour of fabric, place, size, side for opening and fasteners, surface decoration techniques, colour of decoration etc. using self-structured preferential choice index. A list of different surface decoration techniques, constructional features and trimmings suitable for quilt covers was prepared. The four top preferred surface decoration techniques *i.e.* appliqué work, patch work, fabric painting and stencil printing with most preferred tucks and piping were selected for application on quilt covers.

Creation and selection of design:

Forty designs, ten designs for each selected techniques were created in Corel DRAW-9. The created designs were shown to respondents to know their preferences. On the basis of the ranks given by the respondents for designs of surface decoration techniques, two top ranked designs of each technique were selected for further work. Three placements of each selected design with possible were done; hence 24 placements each for front and back side of quilt covers were done in Corel DRAW-9. A design catalogue comprising of 40 designs, ten designs of selected four surface decoration techniques and 48 placements, 24 each for front and back of eight preferred designs with various styles was prepared using computer technology for documentation.

RESULTS AND DISCUSSION

The most important reason for using quilt covers was 'quilt covers can be washed easily as compared to washing of quilts' (83.33 %) followed by 'to prevent the quilt from soiling' (76.66%). 66.67 per cent respondents use quilt covers for more than 10 years followed by 53.33 per cent who replaced the old quilt covers with the new one during 5-10 years. Data reveal that the 66.66 per cent of the respondents discarded old quilt covers when worn out. 60 per cent respondents stitched white quilt covers at home whereas 13.33 per cent used tailor-made white quilt covers. 40 per cent respondents used coloured readymade quilt covers and 20 per cent of respondents stitched coloured quilt covers at home. Regarding procurement of printed quilt covers, 66.66 per cent respondents procured ready-made printed quilt covers followed by 26.66 per cent who stitched at home whereas




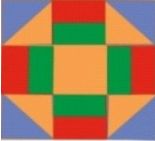

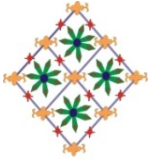


Plate 1 :			
Surface decoration techniques	Design No.	Selected designs	WMS
Appliqué work	2		8.60
	10		9.06
Patch work	4		8.23
	7		8.83
Fabric painting	2		8.63
	7		8.30
Stencil printing	1		7.63
	10		8.83

Fig. 1: Preferred designs of surface decoration techniques


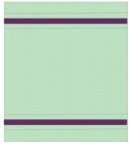

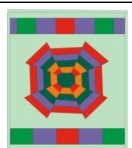
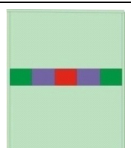
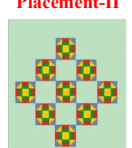
Plate 2a :					
Surface decoration techniques	Design No.	Selected placements			
		Front	WMS	Back	WMS
Appliqué work	2	 Placement-I	2.90	 Placement-III	2.36
	10	 Placement-I		2.73	
Patch work	4	 Placement-II	2.73	 Placement-II	2.53
	7	 Placement-I		2.83	

Fig. 2: Selected placements on quilt covers

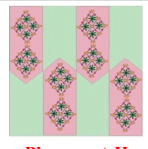
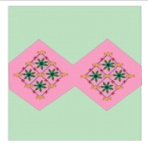


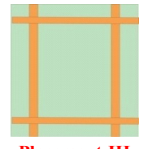

Plate 2b :					
Surface decoration techniques	Design No.	Selected placements			
		Front	WMS	Front	WMS
Fabric painting	2	 Placement-II	2.46	 Placement-II	2.23
	7	 Placement-II		2.70	
Stencil printing	1	 Placement-III	2.33	 Placement-III	2.53
	10	 Placement-I		2.93	

Fig. 3: Selected placements on quilt covers

only 13.33 per cent got stitched from tailor made printed quilt covers. 53.33 per cent respondents procured ready-made designer quilt covers and only 10 per cent stitched designer quilt covers at home. Majority of the respondents procured readymade quilt covers because of easy availability (86.66%). Tailor-made quilt covers were preferred by 33.33 per cent respondents because they found 'readymade covers are not appropriate in size'. 66.66 per cent respondents stitch homemade quilt covers at home because these were economical than readymade and tailor-made. 73.33 per cent of the respondents gave consideration to fabric followed by size (60%), colour (56.66%), price (46.66%), decoration (33.33%), ease of care (23.33%), fashion trends (20%) and the least considered factor was brand (13.33%). It was studied that 70 per cent of the respondents visited retail shops in local market followed by 56.66 per cent. Out of 30 respondents, maximum number of the respondents *i.e.* 20 spent Rs. 500 to 800/- on single bed size quilt cover and 7 respondents who were using double bed size quilt covers, purchased quilt covers between the price range of 800 to 1100/-. It reveals that cent per cent respondents agreed that machine/mill printed designs are most commonly available in the market. The data also depict that all the respondents did not find any type of hand printed designs on quilt covers. Patch worked and hand embroidered designs were also least available as reported by 86.66 percent respondents each. Green coloured (7.06) cotton fabric (3.65) with light intensity (2.80) and under side opening (1.66) alongwith half (2.33) of length (1.73) with zipper scoring 7.33 was preferred for the development of quilt covers. The data show that surface decoration with appliqué work for quilt covers scored highest 12.53 ranked 1st followed by fabric painting (11.21) ranked IInd, patch work (11.00) ranked IIIrd, stencil printing (10.00) ranked IVth. Tucks scoring 4.36 was the most preferred constructional features and piping was preferred to be the most suitable trimming by respondents for decoration of quilt covers which scored highest (3.76). Tetrad colour scheme was preferred the most by respondents scoring 5.25 ranked 1st. Preferences for the combinations were taken from the respondents and it was found that patch work was the most preferred surface decorating technique scoring highest (8.86) ranked 1st followed by combination of fabric painting with patch work scoring 8.30 ranked IInd, appliqué work with patch work (7.73) ranked IIIrd, patch work with stencil printing (7.70) ranked IVth. Ten designs

for each technique *i.e.* appliqué work, patch work, fabric painting and stencil printing were created in tetrad colour scheme using CorelDRAW software. It is envisaged from the study that the design number 2 and 10 of appliqué work; design number 4 and 7 of patch work, design number 2 and 7 of fabric painting and design number 1 and 10 of stencil printing were two top ranked designs. These eight designs of surface decoration techniques were selected for placement on quilt covers (Plate 1).

Design number 2 of appliqué work was most preferred in placement I for front and placement III for back side. Placement I for front and back side of the quilt cover was the most preferred placement for design 10. Design number 2 of fabric painting in placement II for front and back side and design 7 in placement II for front and back side of quilt cover was most preferred placements by the respondents. The most preferred placement design number 4 of patch work as per respondents preferred was placement II for front and back side of the quilt cover whereas for design number 7 in placement I for front and placement II for back was the most preferred placements. For stencil printing, design number 1 with placement III for front and back side of quilt cover and design number 10 with placement I for front and back was adjudged to be best by the respondents.

Conclusion :

It was concluded that more frequently used sources of information to get knowledge about the latest trends in home textiles were window displays, friends or relatives, television and magazines. Respondents liked to have designing on both the side of quilt cover. Developed quilt covers were highly appreciated by the respondents in relation to designs, their placements, surface decoration technique, colour combination, size of quilt covers and designing features used in the quilt covers.

Hence, it can be concluded that application of designs in an appealing manner can increase the marketability of quilt covers.

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